

Application No.: 10/088,501
Amendment Dated: December 9, 2003
Reply to Office Action of: September 16, 2003

AMENDMENTS TO THE CLAIMS

Listing of Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

1. (Currently Amended) A process for selectively removing COS with respect to CO₂ ~~and further acidic gases~~ from a hydrocarbonaceous fluid stream which contains CO₂; and COS ~~and possibly further acidic gases, especially H₂S or mercaptans, as impurities, which comprises~~ comprising:

intimately contacting the fluid stream in an absorption or extraction zone with a scrubbing liquor consisting of an aqueous amine solution containing from 1.5 to 5 mol/l of an aliphatic alkanolamine having of from 2 to 12 carbon atoms and from ~~0.4~~ 0.8 to 1.7 mol/l of at least one activator selected from the group consisting of piperazine, methyl piperazine and morpholine,

removing the COS essentially completely from the fluid stream, and
separating the substantially COS-decontaminated fluid stream and the COS-loaded scrubbing liquor and discharging them from the absorption or extraction zone.

2. (Currently Amended) ~~A~~ The process as claimed in claim 1, wherein the scrubbing liquor contains from ~~0.8 to 1.7 mol/l, preferably from 0.8 to 1.2 mol/l;~~ of the activator.

3. (Currently Amended) ~~A~~ The process as claimed in claim 1, wherein ~~the~~ a total

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amine content of the scrubbing liquid is from 20 to 70% by weight, ~~preferably from 40 to 50% by weight.~~

4. (Currently Amended) ~~A~~ The process as claimed in claim 1, wherein the alkanolamine ~~used~~ is tertiary alkanolamine.

5. (Currently Amended) ~~A~~ The process as claimed in claim 4, wherein the tertiary alkanolamine ~~used~~ is methyldiethanolamine.

6. (Currently Amended) ~~A~~ The process as claimed in claim 4, wherein the tertiary alkanolamine ~~used~~ is triethanolamine.

Claims 7-11. (Canceled)

12. (New) The process as claimed in claim 1, wherein a total amine content of the scrubbing liquid is from 40 to 50% by weight.

13. (New) The process as claimed in claim 1, wherein the same percentage of CO₂ and COS is removed.

14. (New) The process as claimed in claim 1, wherein 99% of the COS in the fluid

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stream is removed.

15. (New) The process as claimed in claim 1, wherein a temperature of the scrubbing liquor at the top of the absorption zone is 40 to 70°C and 50 to 100°C at the bottom.

16. (New) The process as claimed in claim 1, wherein a pressure in the absorption zone is 1 to 120 bar.

17. (New) The process as claimed in claim 1, wherein a pressure in the absorption zone is 10 to 100 bar.

18. (New) The process as claimed in claim 1, further comprising regenerating the scrubbing liquor.

19. (New) The process as claimed in claim 1, wherein said hydrocarbonaceous fluid stream is selected from the group consisting of natural gas, synthesis gas from heavy oil or heavy residues or refinery gas, and synthesis gas from liquid or liquefied hydrocarbons.

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BASIS FOR THE AMENDMENT

The specification has been amended to insert the appropriate headings and provide a Brief Description of the Drawings as supported at page 10, lines 10-33.

Claim 1 has been amended as supported by Claim 2 as originally filed. The remaining Claims have been amended to be consistent with Claim 1 and to recite proper claim language.

New Claims 12-19 have been added.

New Claim 12 is supported by Claim 3 as originally filed.

New Claim 13 is supported at page 5, last two lines.

New Claim 14 is supported at page 6, lines 11 and 12.

New Claim 15 is supported at page 7, last paragraph.

New Claims 16 and 17 are supported at page 8, first two lines.

New Claim 18 is supported at page 8, lines 15-17.

New Claim 19 is supported at page 1, lines 5-11.

No new matter is believed to have been added by entry of this amendment. Entry and favorable reconsideration are respectfully requested.

Upon entry of this amendment Claims 1-6 and 12-19 will now be active in this application.

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INTERVIEW SUMMARY

Applicants wish to thank Examiner Smith for the helpful and courteous discussion with Applicants' Representative on November 3, 2003. During this discussion it was suggested to amend Claim 1 by including an amount of activator of from 0.8 to 1.7 mol/l. The Examiner indicated on the Interview Summary that this appears to overcome the rejection over Appl et al.